

What is claimed is:

[Claim 1] A substrate comprising:

a crystalline substrate including a primary surface so as to have a stepped portion;

a III-Nitride semiconductor layered structure grown over the crystalline substrate, wherein the semiconductor layered structure has a high defect region provided by concentrating lattice defects extending toward a tilted direction of the stepped portion and a low defect region in the vicinity of the high defect region; and

an active region provided at a portion of the low defect region.

[Claim 2] A substrate according to claim 1, wherein the portion in the semiconductor layered structure at which the active region is provided contains fewer defects as compared to surrounding regions.

[Claim 3] A substrate according to claim 1, wherein the crystal plane is a tilted surface which is tilted with respect to the primary surface of the crystalline substrate, and the active region is positioned above lattice defects which extend in a direction substantially perpendicular to the crystal plane.

[Claim 4] A substrate according to claim 1, wherein a convex-and-concave structure is provided in the primary surface of the crystalline substrate, and the crystal plane is part of the convex-and-concave structure.

[Claim 5] A substrate according to claim 4, wherein a convex portion included in the convex-and-concave structure has a forward mesa structure.

[Claim 6] A substrate according to claim 4, wherein a convex portion included in the convex-and-concave structure has a cross section in the shape of a triangle pointing upward from the primary surface of the crystalline substrate.

[Claim 7] A substrate according to claim 4, wherein the convex-and-concave structure has a periodic structure.

[Claim 8] A substrate according to claim 1, wherein the active region is made of a III group nitride compound material, and serves as a light emitting region of a light emitting element.

[Claim 9] A substrate according to claim 1, wherein the active region is made of a III group nitride compound material, and serves as a gate of a field effect transistor.

[Claim 10] A substrate according to claim 1, wherein the active region is made of a III group nitride compound material, and serves as a base of a bipolar transistor.

[Claim 11] A substrate according to claim 1, wherein the active region is made of a III group nitride compound material, and serves as a junction region of a diode.

[Claim 12] A substrate comprising:

- a crystalline substrate;

- a first III-Nitride semiconductor layer provided on the crystalline substrate;

a second III-Nitride semiconductor layer provided on the first semiconductor layer; and

an active region provided in the second semiconductor layer, wherein each of the crystalline substrate and the first semiconductor layer includes a primary surface and a crystal plane provided at least within the primary surface so as to have a stepped portion, and wherein the first semiconductor layer has a high defect region provided by concentrating lattice defects extending toward a tilted direction of the stepped portion.

[Claim 13] A substrate according to claim 12, wherein the crystal plane of the first semiconductor layer is a tilted surface which is tilted with respect to the primary surface of the first semiconductor layer, and the active region is positioned above lattice defects extending in a direction substantially perpendicular to the crystal plane of the first semiconductor layer.

[Claim 14] A substrate according to claim 12, wherein a convex-and-concave structure is provided over the crystalline substrate, and the crystal plane of the crystalline substrate or that of the first semiconductor layer is part of the convex-and-concave structure.

[Claim 15] A substrate according to claim 14, wherein a convex portion included in the convex-and-concave structure has a forward mesa structure.

[Claim 16] A substrate according to claim 14, wherein a convex portion included in the convex-and-concave structure has a cross section in the shape of a triangle pointing upward from the crystalline structure.

[Claim 17] A substrate according to claim 14, wherein the convex-and-concave structure has a periodic structure.

[Claim 18] A substrate according to claim 12, wherein the crystal plane of the first semiconductor layer is positioned above the crystal plane of the crystalline substrate.

[Claim 19] A substrate according to claim 12, wherein the active region is made of a III group nitride compound material, and serves as a light emitting region of a light emitting element.

[Claim 20] A substrate according to claim 12, wherein the active region is made of a III group nitride compound material, and serves as a gate of a field effect transistor.

[Claim 21] A substrate according to claim 12, wherein the active region is made of a III group nitride compound material, and serves as a base of a bipolar transistor.

[Claim 22] A substrate according to claim 12, wherein the active region is made of a III group nitride compound material, and serves as a junction region of a diode.